

# Joshua Hahn

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## EDUCATION

**University of California, Berkeley, CA**

(August 2019 – Present)

*Graduate Student in Chemical and Biomolecular Engineering*

**Purdue University, West Lafayette, IN**

(August 2015 – May 2019)

*Bachelor of Science in Chemical Engineering*

*Minors in Mathematics and Biology*

## WORK EXPERIENCE

**Perrigo Company, Allegan, MI**

(June 2017 – August 2017)

*Process Support Engineer*

- Designed and improved cleaning processes for industrial equipment
- Conducted studies to evaluate effectiveness of different detergents in cleaning machinery
- Optimized washing control system to save water and detergent

## RESEARCH EXPERIENCE

**University of California, Berkeley | Shekhar Lab**

(October 2019 – Present)

*Graduate Student Researcher*

- Leveraging single-cell genomics to explore the molecular underpinnings of cellular diversity and its consequences for the development, dysfunction, and evolution of complex tissues

**Purdue University | Yuan Lab**

(February 2016-May-2019)

*Undergraduate Student Researcher*

- Validated live cell compatible probes for labeling epigenetic modifications
- Explored colocalized epigenetic changes associated with drug resistance in breast cancer using live cell epigenetic bimolecular fluorescence complementation probes
- Investigated interactions and correlations between epigenetics and NUMA with Dr. Sophie Lelievre's lab
- Applied super resolution microscopy techniques with Dr. Fang Huang's lab

**Purdue Summer Undergraduate Research Fellowship | Yuan Lab**

(June 2018 – August 2018)

*SURF Researcher*

- Developed and validated an epigenetic editing system utilizing CRISPR and optogenetic tools

## RESEARCH COMMUNICATIONS

### Publications

1. Kölsch, Y., Hahn, J., Sappington, A., Stemmer, M., Fernandes, A.M., Helmbrecht, T.O., Lele, S., Butrus, S., Laurell, E., Arnold-Ammer, I., Shekhar, K., Sanes, J.R., and Baier, H. , Molecular classification of zebrafish retinal ganglion cells links genes to cell types to behavior. *bioRxiv*, <https://doi.org/10.1101/2020.07.29.226050> (2020)

### Presentations

1. Targeted Epigenetic Editing Using Optogenetic Tools, *Summer Research Symposium, Purdue University*, (August 2018), **Poster Presentation**
2. From Genes to Cell Types to Behavior: Molecular Classification of Zebrafish Retinal Ganglion Cells, *2020 American Institute of Chemical Engineers Virtual Annual Meeting*, (November 2020), **Prerecorded Presentation**

## SKILLS

**Laboratory Skills:** mammalian cell culture, cell transfection, confocal microscopy, super resolution microscopy, traditional and Gibson Assembly cloning, PCR, immunostaining

**Software Skills:** ImageJ, Cell Profiler, SnapGene, MATLAB, Simulink, Aspen, R, Python

## TEACHING EXPERIENCE

**UC Berkeley Chemical and Biomolecular Engineering Department | Graduate Student Instructor**

(August 2019 – December 2019)

*CHM ENG 40: Introduction to Chemical Engineering Design*

- Prepared and led a weekly discussion section to improve student understanding of fundamental engineering principles

- *Delivered a lecture on technical communication in the engineering world*
- *Guided students through a project that applied engineering principles to compare the costs and benefits of using compostable and recyclable plastic cups for use on a college campus*

*CHM ENG 154: Chemical Engineering Laboratory*

**(August 2020 – December 2020)**

- *Collected and analyzed experimental data for six classical chemical engineering experiments*
- *Held office hours and answered discussion forum questions to advance student understanding of transport phenomena, thermodynamics, and chemical kinetics*
- *Delivered a lecture on technical communication*

## **SERVICE EXPERIENCE & ACTIVITIES**

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**Bay Area Scientists Inspiring Students**

**(January 2020 – Current)**

- *Volunteer at local elementary schools to engage young children in science principles*

**UC Berkeley Graduate Student Advisory Committee**

**(March 2020 – Current)**

- *Organize monthly social gatherings to facilitate graduate student relationships*

**Purdue University Bands and Orchestras**

**(August 2015 – May 2019)**

- *Gold Level Volunteer Management Team member*
- *Assistant Head of Operations and Logistics Team*

**President of the Purdue Dota 2 Club**

**(August 2016 – May 2019)**

- *Organized watch parties and tournaments to build a social community*

**Alpha Lambda Delta / Phi Eta Sigma Member**

**(August 2016 – May 2019)**

**Tau Beta Pi Member**

**(April 2018 – May 2019)**

- *Community Outreach Committee*
- *Volunteered at a local dog shelter, church, and zoo to assist and improve the community*